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FISHES OF THE FAMILY GOBIIDAE IN SOUTH AFRICA

by

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FISHES OF THE FAMILY GOBIIDAE IN SOUTH AFRICA

by J. L. B. SMITH

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Gobioid fishes are not popular with most ichthyologists, which is understandable, for most species are small to minute, and of neither commercial nor angling significance. Although almost all live in shallow water, many Gobies are so expert at concealment, that only the most thorough collecting brings them to light. Thirty years ago only 16 species were known in purely South African waters, whereas in the present review, no less than 46 species are described from the South African zone, which is here taken as the area between Walfish Bay and Delagoa Bay.

Critical revision of the South African species is long overdue, as the results of this review clearly reveal. Not only have there been malidentifications but also much confusion, e.g. it has been found that in **nudicepts** C & V, 1837, no less than four species have been confused. In addition, there have been constant new discoveries.

While at one time most or all species were uncritically grouped in the single genus **Gobius** Linn, more careful examination has shown that, although these fishes are small, they vary so widely in important features as to justify extensive generic cleavage, which aids identification. The 46 South African species are divided among 22 genera. One new genus and three new species are described here. Every species described has been illustrated, either in the present work, or in others of my own of recent years. References to the latter are given in each case in bold type.

None of the names of Castelnau (Mem.Poiss.L'Afr.Austr.1861, 55) have been used here, as his brief accounts are not critically diagnostic and the types are apparently lost. None of the South African species have teeth on the palate.

Kindly note that:

Types are in this Department.

Scale series are counted from the gillopening to the caudal base.

Transverse series are counted between anal origin and soft dorsal.

The family Gobiidae is briefly diagnosed as follows: Vertebrae 25-34. Hypurals with splint bone above and below. No airbladder. Gillmembranes variably attached to isthmus. 4 gills, the first slit sometimes closed by membrane, when rakers absent or poorly developed on outer arch. Pseudobranchiae usually present. Mouth more or less terminal, protractile, dentition raptorial, rarely teeth on palate. 2 separate dorsal fins, the 1st of mostly flexible spines. Pelvics united, sometimes weakly and basally only. Body typically scaly, rarely partly, sometimes naked.

The family Gobiidae in South Africa is divided into three sub-families:

Key to Sub-families

A. Body more or less elongate, subcylindrical:
   I. Teeth in lower jaw in several rows. Pelvic fraenum without lateral fleshy processes ..... **Gobiinae**
   II. Teeth in lower jaw in one row on side. Pelvic fraenum usually with fleshy process each side ..... **Sicydiaphiinae**

B. Body more or less oval, deep, compressed ..... **Gobiodontinae**

Sub-family Gobiinae

KEYS TO GENERA

A. 2-3 skinny flaps on shoulder girdle ..... 1. **Platygobius**
AA. No skinny flaps on shoulder girdle ..... B
B. Caudal longer than head ..... Group B
BB. Caudal not longer than head C

C. Pelvic fraenum weak or absent ..... Group C
CC. Pelvic fraenum well developed ..... D
D. Gillopening barely more than pectoral base ..... Group D
DD. Gillopening clearly surpasses pectoral base ..... E
E. Tongue rounded ..... Group E
EE. Tongue truncate or bilobed ..... Group F

Group B

No skinny flap on shoulder girdle. Caudal longer than head.

A. 25-40 scales:
   I. No median predorsal scales ..... 2. **Ctenogobius**
   II. Median preD scales: 2-3 rows of ladder-like papillae along cheek ..... 3. **Parachaeturichthys**

B. More than 50 scales:
   I. One row of teeth in upper jaw ..... 4. **Oxyurichthys**
   II. Several rows of teeth in upper jaw
      a. 50-65 scales ..... 5. **Vanderhorstia**
      b. 80 or more scales ..... 6. **Cryptocentrus**

Group C

Caudal not longer than head. Pelvic fraenum weak or absent:

A. No median predorsal scales:
   I. Pectoral with silklike rays. Gillopening restricted ..... 7. **Monishia**
   II. No silklike rays in P. Gillopening wide ..... 8. **Zonogobius**

B. Median predorsal scales ..... 9. **Quisquilius**

Group D

Pelvic fraenum well developed. Gillopening restricted.

A. Broad flat head with skinny flaps. All scales cycloid ..... 10. **Abranches**

B. Head normal. Most scales ctenoid:
   I. Less than 40 scales:
      a. Midpredorsal naked ..... 2. **Ctenogobius**
      b. Midpredorsal scaly:
         1. Scales to eyes, foremost median scale enlarged ..... 11. **Stigmatogobius**
         2. Front median predorsal scale not enlarged:
            x. Tongue rounded or truncate ..... 12. **Acentrogobius**
            y. Tongue bilobed ..... 13. **Bathygobius**
   II. 40 or more scales:
      a. Barbels on chin, belly inflatable ..... 14. **Sufflogobius**
      b. No barbels on chin, belly normal:
         1. Large recurved lower canines. 12-13 anal rays ..... 15. **Amblygobius**
         2. No recurved canines. Less than 12 anal rays:
            x. Tongue bilobed. Pectoral with silklike rays ..... 13. **Bathygobius**
            y. Tongue rounded or truncate. No silklike rays. Head naked ..... 16. **Coryphopterus**

Group E

Gillopening clearly more than pectoral base. Tongue rounded.

A. Fewer than 60 scales:
   I. Dorsal much higher than body ..... 17. **Waitea**
   II. Dorsal low ..... 11. **Stigmatogobius**

B. More than 80 scales ..... 6. **Cryptocentrus**

Group F

Gillopening wide. Tongue truncate or bilobed:

A. Fewer than 50 scales:

Head depressed. Tongue bilobed. Nape scaly:

x. Front half of gillmembranes fused with isthmus. Scales on opercle. A I 6-8 ..... 18. **Glossogobius**

y. Gillmembranes almost completely free from isthmus. Nuchal scales not to eyes, none on opercle A I 9-10 ..... 19. **Psammogobius**

B. More than 50 scales ..... 6. **Cryptocentrus**

1. **Platygobius** Bleeker, 1874.

Type **Gobius macrorhynchus** Blkr, 1867. Head depressed. Small eyes, wide apart. Small ctenoid scales, over nape, not to eyes, head naked. Large mouth, lower jaw shorter. Gillopening little forward below, 2-4 knobs on edge of shoulder. Pelvic fraenum strong. Caudal less than head. Indo-Pacific, fresh to brackish water. One species in S.A.

PLATYGOBIUS AENEOFUSCUS (Peters), 1852, 681. **Gobius aeneofuscus** Peters 1868, 18, **P1 3, f 1** (Moz.). Norman 1922, 322 (rec.Natal). Barnard 1927, 819. Smith 1949b, 335, **P1 70, f 925,** and 1959, 191, **P1 9, B.** D VI(VII)+I 10-11. A I 10-11. P 16-17. 58-65 scales. Tr 18-24. Predorsal 24-28. Gillrakers 1+1+4-5. Depth 4.3-5, head 3.3-3.5 in body. Eye 5-7 in head, 2-3 in snout, 1.2-2.1 in interorbital with age. Head broad, markedly so with age. Lower jaw shorter. No canines. Tongue bilobed. Pectoral 1.3 in head. Pelvic cupshaped, 1.6-2 in head, both fins far short of anus. Predorsal scales $\frac{3}{4}$ to eyes. Small cycloid scales on pectoral base and hind half of prepelvic. In life greenish, blotched, see Smith 1949b, **P1 70, f 925.** To 250mm. Estuaries and rivers of E.Cape eastwards and north to Natal, E.Africa and Madagascar.

2. **Ctenogobius** Gill, 1858.

Type **C.fasciatus** Gill, 1858. 25-35 scales; few on side of nape, but none median predorsal or on head. Canines in males. Tongue truncate or bilobed. Gillopening barely exceeds pectoral base. Pelvic fraenum strong. 7-12 dorsal and 7-11 anal soft rays. Caudal more or less than head. Indo-Pacific, 5 species in S.A.

A. 5 dorsal spines, 3rd elongate. Hind D & A rays longer ..... **key**

B. 6 dorsal spines:

I. Caudal longer than head:

a. 10-11 soft rays in D & A. Maxilla to below hind edge eye ..... **acutipennis**

b. 12 rays in D & A. Maxilla well behind eye ..... **keienis**

II. Caudal shorter than head:

a. 30-33 scales. D VI+I 9 ..... **nebulosus**

b. 35-36 scales. D. VI+I 10-11 ..... **cloatus n.sp.**

CTENOGOBIUS KEY (Smith), 1947. **Gobius key** Smith 1947, 807: and 1949b, 333, **P1 70, f 916.** D V+I 9. A I 8. P 19. 29 scales. Tr 9-10. Gillrakers 1+1+7. Only the type, 58mm, Delagoa. Dorsal probably normally with 6 spines.

CTENOGOBIUS ACUTIPENNIS (C & V), 1837. **Gobius acutipennis** Barnard 1927, 823 (Natal). **Ctenogobius acutipennis** Smith 1959, 196, **P1 10, H.** D VI+I 10-11. A I 10-11. P 20. 27-30 scales. Tr 7-8. Gillrakers 2+4-5. Caudal exceeds head. Life colours as in Smith 1959, **P1 10, H.** To 120mm. Natal, to Indo-Pacific, rare.

CTENOGOBIUS KEIENSIS (Smith), 1938. **Gobius keiensis**Smith 1938, 319, **f 1:** and 1949b, 336, **P1 70, f 928.** D VI+I 12. A I 12. P 19. 30 scales. Tr 8. 1+9 gillrakers. Caudal exceeds head. 60mm. Life colours as Smith 1949b, **P1 70, f 928.** Only the type, 60mm. Kei River, Cape.

CTENOGOBIUS NEBULOSUS (Forskal), 1775. **Gobius criniger** Barnard 1927, 820 (Moz.). **G.nebulosus** Smith 1949b, 334, **P1 71, f 917:** and 1959, 197, **P1 9, A.** D VI+I 9. A I 9. P 18-19. 30-33 scales. Tr 11-12. Gillrakers 3+1+5. Life colours as Smith 1949b, **P1 71, f 917.** 180mm. Durban, northwards, Indo-Pacific, abundant in shallow sheltered waters.

Ctenogobius cloatus n.sp.

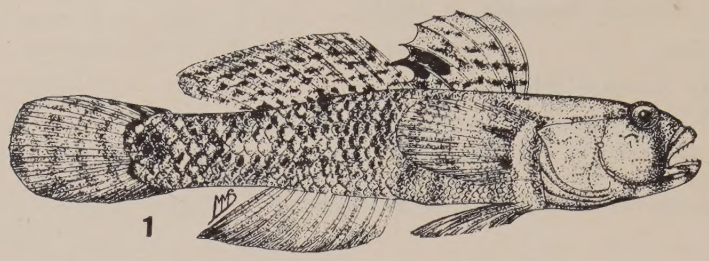

Fig. 1. **Ctenogobius cloatus n.sp.** Type. 85mm.

D VI+I 10-11. A I 9-10. P 19. Scales 35-36. Tr 11. Gillrakers 1+1+7. Depth 5, head 3.5 in body. Eyes adjacent, 4.5-5 in head, which is moderately depressed. No scales before line from pectoral axil to 2nd dorsal spine, none on nape or head, a narrow naked area along base of 1st dorsal. Small cycloid scales on mid belly, on pectoral base, and on hind half of prepelvic. Short irregular series of large papillae under eye, odd groups of 2-3 on occipit and nape each side of dorsal origin. Mouth reaches below front to front third of eye, teeth in bands, outer series enlarged. Tongue truncate or feebly bilobed. Gillopening little exceeds pectoral base. Dorsals united basally. Pectoral and pelvic to or near anal origin with age, pelvic fraenum strong. Dark brown, mottled and spotted, forming irregular cross bars. 1st dorsal basally with lines of spots, variable black blotches on hind part, 2nd dorsal with lines of spots, fins otherwise vaguely mottled. 60-85mm, East London to Knysna, in estuaries, often concealed in mud. Type 85mm, Knysna. Related generally to **saldanha** Barnard, but that is known only from the Cape to S.W.Africa, and in that species the upper pectoral rays appear silklike.

3. **Parachaeturichthys** Bleeker, 1874.

Type **Chaeturichthys polynema** Blkr, 1853. 28-30 ctenoid scales, but cycloid on belly and forward of pectoral, all predorsal scaly to interorbital, a few on back of snout, on cheeks, on pectoral base and chest. Rows of ladder-like papillae on cheek. Gillopening to almost below preopercle edge. Pelvic fraenum strong. Sometimes cilia on chin. Caudal not less than head. Indo-Pacific, 1 species.

PARACHETURICHTHYS POLYNEMA (Bleeker), 1853. **Gobius polynema** Fowler 1925, 262. Barnard 1927, 826. Smith 1949b, 334, **f 920. Parachaeturichthys polynema** Smith 1959, 197, **f 11.** D VI+I 9-10. A I 9-10. P 21-22. Scales 28-30. Tr 8. Predorsal 11-12. Gillrakers 2+1+8-9. Pectoral exceeds head. Small barbels may be present on chin, otherwise as in genus above. In life greenish, fins darker, prominent black oval spot at upper base of caudal. To 150mm. Natal, northwards, to Indo-Pacific, rare. None of my 4 specimens have barbels on chin.

4. **Oxyurichthys** Bleeker, 1860.

Type **Gobius belosso** Blkr, 1854= **papuensis** Val, 1837. Compressed, low crest along nape. 50-100 ctenoid scales, some on nape, head naked. Uniserial large teeth in upper jaw. 2-4 in lower. Gillopening little exceeds pectoral base. Pelvic fraenum strong. 12-13 dorsal and 12-14 anal soft rays. Dorsal spines filamentous in males. Caudal exceeds head. Indo-Pacific, 4 species in S.A. Weedy, turbid inshore waters.

A. Simple tentacle on eye ..... **tentacularis**

B. No tentacle, or teat-shaped one:

I. 50-55 scales ..... **microlepis**

II. 70-90 scales. Prepelvic scaly ..... **papuensis**

III. More than 90 scales. Prepelvic naked ..... **lemayi**

OXYURICHTHYS TENTACULARIS (C & V), 1837. Smith 1953, 521 (Xora R.): and 1959, 203, **Pl 9, E.** D VI+I 12. A I 12-13. P 20-22. 55-65 scales. Tr 16. Predorsal 25. Gillrakers 3+1+5. A short plain tentacle on eye. Median predorsal naked. Side of nape scaly. Life colours unknown. To 165mm. Indo-Pacific, one found in Xora River, Transkei.

OXYURICHTHYS MICROLEPIS (Bleeker), 1849 (**cristatus** Day, 1873: **nuchalis** Barnard, 1927). **Gobius cristatus** Smith 1949b, 336, **f 929. O.microlepis** Smith 1959, 203 **f 20.** D VI+I 12-13. A I 13. P 20-22. Scales about 55. Tr 14. Predorsal 17. Gillrakers 1+1+3. Median predorsal naked, side of nape scaly. Pectoral base, prepelvic, and head, naked. No tentacle at eye. In life greenish, pearly below, with bluish spots. Fins pink, 1st dorsal with 2 blue lines, 2nd with blue spots, pectoral and pelvic orange. Caudal pink, lower edge violet, black spots. To 150mm. Natal, Delagoa, to Indo-Pacific.

OXYURICHTHYS PAPUENSIS (C & V), 1837. Smith 1949b, 507, **f 913a**; and 1959, 203, **Pl 10, I.** D VI+I 12. A I 13. P 21-23. 70-90 scales. Tr 20. Predorsal 18-25. Gillrakers 3+1+5. Eye plain, or with teat-shaped tentacle above. Median predorsal naked, sides scaly. Pectoral base, and head, naked, a patch of prepelvic scales. Life colours brilliant, as Smith 1959, **Pl 10, I.** Marked blotch at caudal base. 180mm. Natal, Delagoa, Indo-Pacific.

OXYURICHTHYS LEMAYI (Smith), 1947, 411; and 1949b, 331, **Pl 69, f 913:** and 1959, 204, **Pl 12, J.** D VI+I 12. A I 13. P 22. 100-110 scales. Tr 24. Predorsal 25. Gillrakers 3+1+5. No tentacle at eye. Median predorsal naked, sides scaly. Pectoral base, prepelvic and head naked. Life colour vivid, as Smith 1949b, **Pl 69, fs 913.** 160mm. Delagoa only.

5. **Vanderhorstia** Smith, 1949.

Type **Gobius delagoae** Barnard, 1937. 55-65 ctenoid scales, nape and head naked. Gillopening wide. Pelvic fraenum strong. Caudal exceeds head Western Indian Ocean, weedy areas, 2 species, one in S.Africa, one in E.Africa.

VANDERHORSTIA DELAGOAE (Brnrd), 1937. **Gobius delagoae** Barnard 1937, 62, **f 3.** Smith 1949b, 336, **fig 930, Pl 55, f 930:** and 1959, 192, **f 4.** D VI+I 13. A I 13. P 20. Scales 55. Tr 14. Gillrakers 5-6+1+9-10. 5th dorsal spine longest. In life as Smith 1949, **Pl 55, f 930.** To 75mm. Inhaca and Bazaruto.

6. **Cryptocentrus** C & V, 1837.

Type **Gobius cryptocentrus** C & V, 1837. 85-125 ctenoid or cycloid scales. Head and nape naked or scaly. Gillopening wide. Pelvic fraenum strong. 9-13 soft rays in dorsal and anal fins. Caudal longer or shorter than head. Indo-Pacific, 2 species in S.Africa.

A. Light stripes across body, spots on head and fins ..... **octofasciatus**

B. Blue spots on head and body. 1st dorsal very high ..... **pretoriusi**

CRYPTOCENTRUS OCTOFASCIATUS Regan, 1908. Smith 1949b, 332, **Pl 72, f 914;** and 1959, 193, **Pl 10, D.** D VI+I 10. A I 9. P 17-18. 90 scales. Gillrakers 2+1+9. Life colours as shown in Smith 1959, **Pl 10, D.** To 90mm. Lives in a burrow on the bottom with a prawn.

CRYPTOCENTRUS PRETORIUSI Smith 1958, 127, **f 2:** and 1959, 193, **f 5.** D VI+I 11. A I 11. P 18. Scales 100. 16 lower gillrakers. Life colours unknown. Only the type, 61mm., Pondoland.

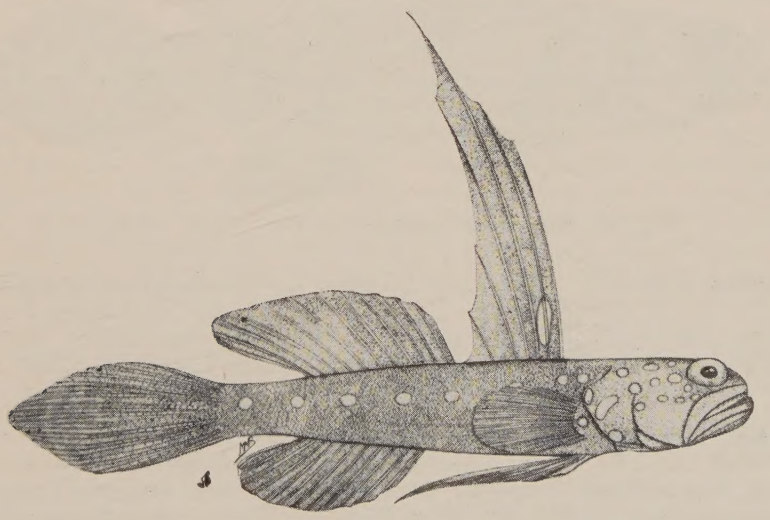

Fig. 2. **Cryptocentrus pretoriusi** Smith. Type.

7. **Monishia** Smith, 1959.

Type **Bathygobius william** Smith, 1947. 30-45 ctenoid scales, but cycloid anteriorly. Nape, head and prepelvic, naked. Gillopening only over pectoral base, 1st gill slit partly or fully closed. Upper pectoral rays silklike. Pelvic fraenum weak or absent. Caudal less than head. S. and East Africa only, 4 species.

A. 30-33 scales. 9 soft dorsal rays (Mozambique) ..... **oculata**

B. 35-38 scales. 11-12 soft dorsal rays. Base of pectoral and mid-belly scaly:

I. Black blotch on upper part of pectoral base. 10 soft anal rays (Mozambique) ..... **sordida**

II. No black blotch on pectoral base. 9 anal soft rays. (Southwest Africa) ..... **saldanha**

C. 39-43 scales. 10-11 dorsal soft rays. Base of pectoral and mid-belly naked (South coast of S.A.) ..... **william**

MONISHIA OCULATA Smith 1959, 206, **Pl 9, H.** D VI+I 9. A I 8. P 5+12. Scales 30-33. Tr 12-13. Gillrakers 1+1+0. 1st gillarch closed to angle, no lower rakers. Belly, pectoral base and prepelvic naked. In life, yellowish, barred as in fig. 3. To 28mm. Inhaca, northwards, W.Indian Ocean only.

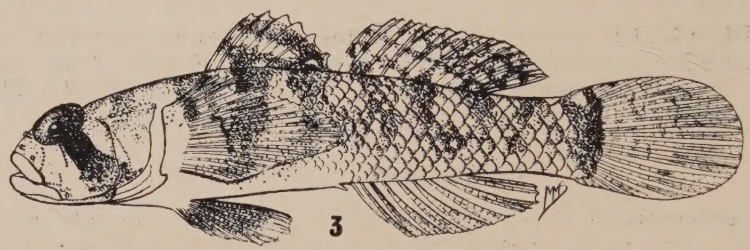

Fig. 3. **Monishia oculata** Smith. Type, 25mm.

MONISHIA SORDIDA Smith 1959, 206, **f 25.** D VI+I 11-12. A I 9. P 6+15-16. Scales 35-38. Tr 11-12. Gillrakers 2+1+5. Front of 1st gillarch closed. Belly and pectoral base scaly, none prepelvic. In life, brownish, mottled and barred, always a dark spot at upper part of pectoral base. To 52mm. Delagoa northwards to Kenya, turbid inshore areas.

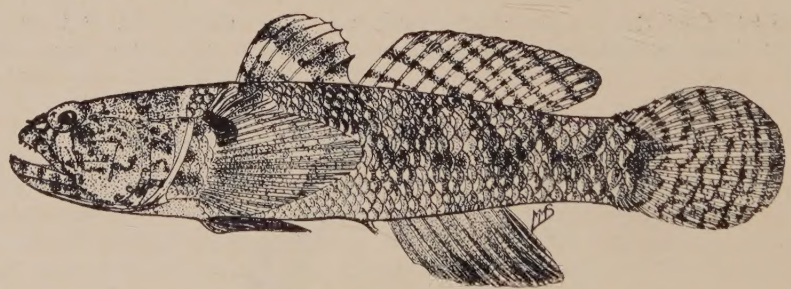

Fig. 4. **Monishia sordida** Smith. Type, 45mm.

MONISHIA SALDANHA (Barnard), 1927, 823 (**Gobius s.**). **Bathygobius saldanha** Smith 1949b, 331, **f.912.** D VI+I 10-11. A I 9-10. P 4+17. L.l. 35-36. Tr 10. Gillrakers 2+1+7. Small hidden cycloid scales on belly and pectoral base, no predorsal scales, head naked. To 85mm., Cape Peninsula (Atlantic) to Saldanha Bay. The data of **Gobius olivaceus** Castelnau, 1861 accord best with this species, except that the length of the (lost) type is stated as 140mm.

MONISHIA WILLIAM (Smith), 1947. **Bathygobius william** Smith 1947, 341, **f 2:** and 1949b, 331, **Pl 71, f 911:** and 1959, 207, **Pl 13, F.** D VI+I 10-11. A I 8-9. P 8+13-14. 39-43 scales. Tr 12. Gillrakers 3+1+4-5. Nape, head, prepelvic area, mid-belly, and pectoral base naked. In life variable, common pattern as Smith 1949b, **Pl 71, f 911.** To 50mm. Xora to Inhaca, tide pools, overlaps **sordida** Smith, at Inhaca, the latter more tropical.

8. **Zonogobius** Bleeker, 1874.

Type **Gobius semidoliatus** Val, 1837. 23-30 ctenoid scales, nape and head naked. Gillopening wide. Pelvics united, no fraenum. Caudal short. Indo-Pacific. One species in S.Africa.

ZONOGOBIUS FLAMMEUS Smith, 1959, 209, **Pl 10, G.** D VI+I 9-10. A I 8-10. P 17. Scales 23-36. Tr 8-9. Gillrakers 3+1+11-12. Depth 3.8, head 3.6, pectoral equals pelvic, 4 in body. 2nd and 3rd dorsal spines filiform, almost twice head. In life, light orange, with darker orange spots, edge of soft dorsal and caudal dusky—see Smith 1959, **Pl 10, G,** for colour in life. 20-25mm., mainly in coral. Inhaca northwards, over whole W.Indian Ocean. Recently found in Australasia also.

9. **Quisquilius** Jordan & Evermann, 1902.

Type **Q.eugenius** J & E, 1902. 24-35 ctenoid scales, nape scaly, sometimes opercle. Gillopening wide. Pelvics united, no fraenum. Caudal less than head. Indo-Pacific. 2 species in S.Africa, distinguished by markings.

QUISQUILIUS EUGENIUS Jordan & Evermann, 1902. Smith 1949b, 507, **Pl 101, f 935a:** and 1959, 210, **Pl 12 D.** D VI+I 10-11. A I 8-9. P 17. Scales 30-40. Tr 10. Predorsal 15. Gillrakers 3+1+9-11. In life, red, orange or brown, with numerous light cross-bars, fins spotted, see Smith 1949, **Pl 101, f 935a.** 50mm. Inhaca northwards to mid-Pacific.

QUISQUILIUS INHACA (Smith) 1949, 103, and 1949b, 507, **Pl 101, f 923a:** and 1959, 210, **Pl 12, F.** D VI+I 10-11. A I 18. Scales 27-28. Tr 14. Predorsal 15. Gillrakers 2+1+10. Brick red, edges of scales darker. Few light cross-bars on head. 40mm. Inhaca to Kenya.

10. **Abranches** Smith, 1947.

Type **A.pinto** Smith, 1947. Broad flat head, with skinny flaps. Minute cycloid scales to shoulder, few predorsal, head naked. Gillopening little more than pectoral base. Pelvic fraenum strong. Caudal short. Only the genotype.

ABRANCHES PINTO Smith, 1947, 813; and 1949b, 331, **Pl 72, f 909;** and 1959, 211, **Pl 12, I.** D VI+I 10. A I 9. P 21. Scales 50. Tr 20. Gillrakers 1+1+9. Brownish, dark marks; in life as Smith 1949b, **Pl 72, f 909.** To 65mm. Found only in one area, Ponte Maone, Delagoa Bay.

11. **Stigmatogobius** Bleeker, 1874.

Type **Gobius pleurostigma** Blkr, 1849 = **sadanundio** Ham-Buch, 1822. 25-40 ctenoid scales, nape with cycloid scales to eyes, large unpaired median scale in front, opercle and sometimes cheek with cycloid scales. Maxilla often longer in males. Gillopening little exceeds pectoral base. Dorsal and anal short. Pelvic fraenum strong. Tiny fishes, Indo-Pacific, two species in S.Africa.

A. 26-29 scales. Interorbital narrow ..... **dewaali**

B. 35-38 scales. Interorbital wider ..... **durbanensis**

STIGMATOGOBIUS DEWAALI (Weber), 1897. **Gobius dewaali** Weber, 1897, 145 (Natal). Barnard 1927, 815 (copy): Smith 1949b, 338 (copy). **Gobius maxillaris** Davies, 1949, 375, fig (Knysna). Smith 1949b, 333, **fig 915a** (Knysna). D VI+1 7-8. A I 6-7. P 17-18. 26-29 scales. Tr 9. PreD 9, front median scale enlarged. Gillrakers 2+1+6-8. Head moderately compressed, eyes $\frac{1}{3}$ diameter apart. Depth 4, head 4.5 in body. Eye 3 in head, greater than snout. Two horizontal series of papillae along cheek. In females mouth moderate, reaches below mid-eye, in males larger, to below hind border of eye. Teeth in bands, outer series slightly enlarged, no canines. Lips moderate, in males somewhat swollen. Tongue slightly pointed. Front nostril tubular, points forward over upper lip. Gillopenings extend forward, but not to below preopercle margin, rakers low knobs. First dorsal quite separate from second, pectoral and pelvics short of anal origin. Pelvic fraenum well developed with small acute lateral lobe. Caudal rounded, about equals head. Scales on body ctenoid, but cycloid on belly, pectoral base, prepelvic, on nape and head. Predorsal fully scaly to eyes, a patch of 3-4 vertical series on opercle, rest of head naked.

Live colour olive with dark marks; as preserved; similar, with conspicuous dark blotch on dorsal base and zig-zag dark marks on body, some variable lines on head and on fins. To 37mm., Knysna, Durban and Zululand, quiet sheltered inland waters. A ripe female from Knysna considerably swollen with eggs 0.4mm. diameter. There appears to be little doubt that **maxillaris** Davies, is identical with **dewaali** Weber. This is a rather curious distribution for so small and feeble a fish. Weber's

original description is erroneous, he stated D VI+I 9 and A I 9, the type 41mm. I am greatly obliged to Dr. L. F. de Beaufort, who has examined the types and co-types. He informs me that the type is 37mm. in length, and counts D VI+I 8 and A I 7. Dr. J. J. Hoedeman of Amsterdam has kindly sent me some co-types of **dewaali** from the type locality, and I find these to agree well with my Knysna and Zululand specimens. They have D VI+I 7-8 and A I 6-7. It is with some doubt that this species is assigned to **Stigmatogobius,** as the head is fairly well compressed.

STIGMATOGOBIUS DURBANENSIS (Barnard) 1927, 815. Smith 1949b, 333, **f 915.** D VI+I 7. A I 7. P 16. L.l. 35-38. Tr 10-11. Predorsal 15, to eyes. Gillrakers 1-2+1+7. Head depressed, eyes ¾ diameter apart. Cycloid scales on belly, chest, prepelvic and nape to eyes, those on opercle feebly ctenoid. Dusky, faint irregular cross-bars, double curved bar across Cd base. To 45mm. Mangrove areas, Durban.

12. **Acentrogobius** Bleeker, 1874.

Type **Gobius chlorostigma** Blkr, 1849 = **viridipunctatus** Val, 1837. Less than 40 ctenoid scales, some on nape, sometimes on opercle, head otherwise naked. Gillopening barely exceeds pectoral base. Pelvic fraenum strong. Rarely silklike rays in pectoral. Indo-Pacific, a "catch-all" genus, holding a varied assembly of numerous species, that defies attempts at satisfactory subdivision. 6 species in S.Africa:

A. 24-30 scales:

- I. 7 dorsal and 6 anal rays. Predorsal 11 ..... **balteatops**
- II. 8 dorsal and 8 anal rays. Predorsal 2-3 ..... **reichi**
- III. 10-11 dorsal and 9-11 anal rays:
  - a. 9 anal rays:
    1. 8 predorsal scales. Head not depressed ..... **spence**
    2. 12-14 predorsal scales. Head depressed. Small species ..... **simulus n.sp.**
  - b. 10-11 anal rays. Marked line down through eye ..... **cauerensis**

B. 32-34 scales. Triangular mark at upper pectoral base ..... **triangularis**

ACENTROGOBIUS BALTEATOPS Smith, 1959, 200, **Pl 9, D.** D VI+I 7. A I 6. P 19. Scales 26. Tr 10-11. PreD 11. Gillrakers 3+1+7. In male, mouth to beyond eye, shorter in female. Predorsal scales to eyes, ctenoid scales on opercle, rest of head naked. Yellow, top of 1st dorsal dark, 4-5 dark bars across body, that below 1st dorsal marked, 4 dark blotches along ventral surface from front of anal back, 2 lines along base 2nd dorsal. Known from 2 specimens, 31-38mm., Inhaca.

ACENTROGOBIUS REICHEI (Bleeker), 1853. Smith 1959, 201, **fig 16.** D VI+I 8. A I 8. P 16-18. 26-28 scales. Tr 7-8. Predorsal 2-3. Gillrakers 3+1+7. Tongue truncate. Ctenoid scales to shoulder, where cycloid. Only 2-3 median predorsal, 6-7 on side of nape. Head naked. Marked as shown. To 60mm. Ponte Maone, Delagoa. Tropical Indo-Pacific. Lives in sandy areas.

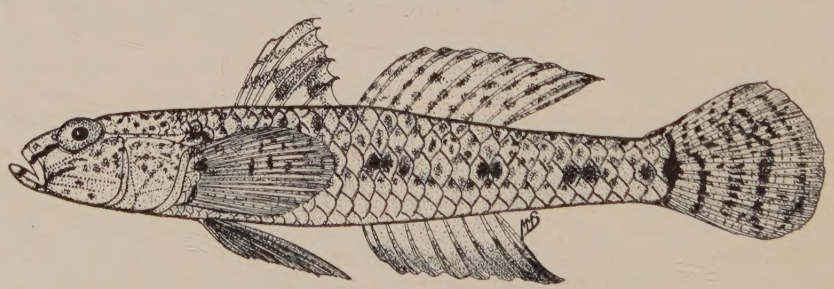

Fig. 5. **Acentrogobius reichei** (Blkr). 52mm.

ACENTROGOBIUS SPENCE (Smith), 1946, 809, and 1949b, 335, **f 921;** and 1959, 203, **f 19.** D VI+I 10-11. A I 9. P 19. 28-29 scales. Tr 8. PreD 8. Scales to eyes, none on opercle. Snout rounded, lower jaw shorter. Sandy grey, with faint dark marks. 55mm. Inhaca.

Acentrogobius simulus n.sp.

Fig. 6. **Acentrogobius simulus n.sp.** Type.

D VI+I 10. A I 9. P 16. Scales 28-30. Tr 7-8. PreD 12-14. Gillrakers 1+7. Depth about 5.5, head 3.6 in body. Head fairly depressed, eyes adjacent, 3.2 in head, twice snout. A rectangular series of papillae along cheek. Gillopening little more than pectoral base. Maxilla below front of eye, mouth oblique, lower jaw projects. Teeth in bands, outer series enlarged, lips smooth. Pectoral and pelvic not or barely to anus, pelvic fraenum strong. Scales ctenoid, but belly, whole of prepelvic, pectoral base, and whole nape to eyes, with cycloid scales. Head naked. In life yellowish brown, with vague darker mottlings on body, one or two dark marks at base of caudal, all fins dark speckled. 5 specimens, 32-35mm., the type 33mm., all Ponte Maone, Delagoa Bay, shallow turbid pools, one a ripe female, with eggs 0.4mm. diameter. This minute fish clearly distinct from all others, possibly merits generic distinction.

ACENTROGOBIUS CAUERENSIS (Bleeker), 1853. **Gobius capistratus** Peters, 1855: Norman 1922, 322 (rec. only): Barnard 1927, 819 (rec. only): Smith 1949b, 337, **Pl 72, f 931:** and 1959, 202, **Pl 11, C & D.** D VI+I 10-11. A I 10-11. P 15-17. Scales 30. Tr 9. PreD 8-10. In life as Smith 1959, **Pl 11, C & D.** To 80mm. Transkei, common in Natal and northwards, tide pools, to central Pacific.

ACENTROGOBIUS TRIANGULARIS (Weber), 1909. Smith 1959, 199, **f 14.** D VI+I 9. A I 7-8. P 18-20. Scales 32-34. Tr 9-10. PreD 13-14. Gillrakers 2+1+7. Predorsal scales almost to eyes, none on opercle. 2-4th dorsal spines elongated to head length. Brownish, mottled, dark blotch on upper pectoral base, white area in front, this yellow in life. To 67mm. Inhaca northwards, to Indo-Pacific.

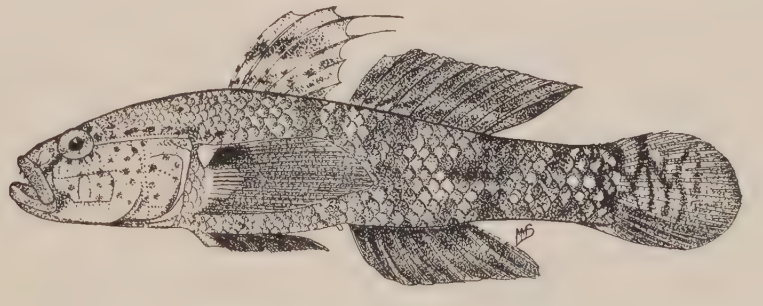

Fig. 7. **Acentrogobius triangularis** (Weber), 60mm.

13. **Bathygobius** Bleeker, 1878.

Type **Gobius nebulopunctatus** C & V, 1837 = **fuscus** Ruppell, 1828. 30-45 ctenoid scales, nape scaly, sometimes opercles. Tongue bilobed. Gillopening barely exceeds pectoral base. Pectoral with upper rays silklike. Pelvic fraenum strong, lobed. Few species, Indo-Pacific, one in S.Africa.

BATHYGOBIUS FUSCUS (Ruppell), 1828. **Gobius obscurus** Gilchrist & Thompson 1914, 80. **G.nebulopunctatus** Regan 1917, 403: and **albopunctatus** 1919, 200. **G.fuscus** Barnard 1927, 821. **B.fuscus** Smith 1949b, 331, **Pl 71, f 910:** and 1959, 212, **Pl 11, I.** D VI+I 8-9. A I 8 (rarely 7 or 9). P 18-20. Scales 38-44. Tr 11-13. PreD 18-25. Gillrakers 3+1+6-7. Front third of 1st gill-arch closed. Pelvic fraenum with lobe each side. Predorsal scales almost to eyes, head naked. In life as Smith 1959, **Pl 11, I,** highly variable in colour, pattern and intensity, some almost black. 120mm. Reaches Port Alfred, abundant Natal northwards, Indo-Pacific. So variable in livery as to have numerous synonyms, and still appears described as new.

14. **Sufflogobius** Smith, 1956.

Type **Gobius bibarbatus** von Bonde, 1923. 50-60 ctenoid scales, small cycloid scales predorsal to near eyes, pectoral base and prepelvic scaly, head naked. Gillopening little exceeds pectoral base. Pelvic fraenum strong. Belly inflatable. Lobe on chin with 2 points. Bony ridge on edge of shoulder. Only the type, S.W.Africa.

SUFFLOGOBIUS BIBARBATUS (von Bonde), 1923. **Gobius bibarbatus** von Bonde 1923, 28, **P1 VI.** Barnard 1927, 825. Smith 1949b, 337, **f 934:** and 1956, 714. D VI+I 13. A I 12-13. P 22. 56-58 scales. Tr 16. PreD 25-30. Gillrakers 2+1+9. Lower jaw projects, maxilla to below front of eye. Teeth in bands, outer series irregularly enlarged. Gillrakers slender. Bony ridge at middle of edge of shoulder, below operculum. Dorsals well separated. Pectoral to anal origin, pelvic short of anus. Predorsal scales small, cycloid, irregular. Brown, variously mottled and barred. To 130mm. S.W.Africa, shore to 50 fathoms.

15. **Amblygobius** Bleeker, 1874.

Type **Gobius sphynx** Val, 1837. 50-80 ctenoid scales, cycloid predorsal, and on opercle. Gillopening little more than pectoral base. 12-16 rays in dorsal and anal. Pelvic fraenum moderate. Large lower canines. Indo-Pacific, weedy areas, 2 species in S.A., closely related, but distinct, not sexual dimorphs.

A. 20 predorsal scales ..... **sphynx**

B. 30 predorsal scales ..... **albimaculatus**

AMBLYGOBIUS SPHYNX (C & V), 1837. **Gobius stagon** Smith 1949b, 337, **P1 70, f 932. A.sphynx** Smith 1959, 204, **P1 11, G.** D VI+I 13-15. A I 14. P 17-19. 50-52 scales. Tr 18-20. PreD 20-22. Life colour as Smith 1959, **P1 11, G.** To 180mm. Rare, Inhaca northwards, Madagascar and Mauritius.

AMBLYGOBIUS ALBIMACULATUS (Ruppell), 1828. **Gobius albimaculatus** Ruppell 1828, 135. Smith 1949b, 337, **f 933. G.vonbondei** Smith 1936, 47, **f 1. A.albimaculatus** Smith 1959, 204, **P1 10, B.** D VI+I 13-15. A I 12-14. P 17-20. 50-55 scales. Tr 18-20. About 30 preD. Life colour as Smith 1959, P1 10, B, sometimes with white bars across belly. To 180mm. Durban northwards, Indo-Pacific.

16. **Coryphopterus** Gill, 1863.

Type **C.glaucofraenum** Gill, 1863. Head depressed, broadens with age. 40-70 ctenoid scales, cycloid in front, median predorsal scales rarely present, head quite naked. Teeth in wide bands, outer series enlarged, tongue rounded. Gillopening barely exceeds pectoral base. Pelvic short, fraenum strong. Caudal short. Five species in South Africa, previously confused, three formerly malidentified as **nudiceps** C & V.

A. 44-45 scales. Tr 11. 11-12 D and 10 A soft rays ..... **agulhensis**

B. 48 or more scales. Tr 13-22:

I. 9 anal and 10 dorsal soft rays. 50-54 scales ..... **natalensis**

II. 9-10 anal and 11 dorsal soft rays. 48-53 scales:

a. 0-7 median predorsal scales. Usually a light-edged dark bar at pectoral base ..... **nudiceps**

b. 12-16 median predorsal scales. No marked bar at pectoral base ..... **multifasciatus**

III. 10-11 anal and 12-13 dorsal soft rays. 65-70 scales. Usually strong dark cross-bars. No median predorsal scales ..... **caffer**

CORYPHOPTERUS AGULHENSIS (Barnard), 1927. **Gobius agulhensis** Barnard 1927, 821. Smith 1949b, 335, **f 924.** D VI+I 11-12. A I 10. P 21. L.l. 44-45. Tr 11. Gillrakers 1+1+7. Depth about 5, head about $3\frac{1}{2}$ in body. Eye 4 in head, which depressed, eyes almost adjacent. 3-4 short vertical series of papillae below eye, one oblique behind. No scales before line from 1st dorsal spine to pectoral axil. Mid-belly, prepelvic, pectoral base, nape, and head all naked. All scales very strongly ctenoid, those at shoulder $1\frac{1}{2}$ times as deep as long. Maxilla to below front of pupil, lips

marginally villose, tongue rounded, teeth in bands, outer series enlarged. Dorsals separate, ends of dorsal and anal not to caudal base. Caudal ⅔ head. Pectoral to anus, pelvic shorter, fraenum strong. In life orange and brown; preserved, with vague darker mottlings on body, a black ocellus at base of 5-6th dorsal spines, as Smith 1949b, f 924. A rare species, only 2 specimens, 50 and 86mm., both from about 20 fathoms in False Bay, Cape.

CORYPHOPTERUS NATALENSIS (Gunther), 1874, 453 (Natal). **Gobius gymnauchen** Weber 1897, 144 (Natal). **G.nudiceps** (non C & V, part) Barnard 1927, XXI, 816. Smith 1949b, **Pl 71, fig 927. G.melanocephalus (non** Blkr) Barnard, **ibid** 818.

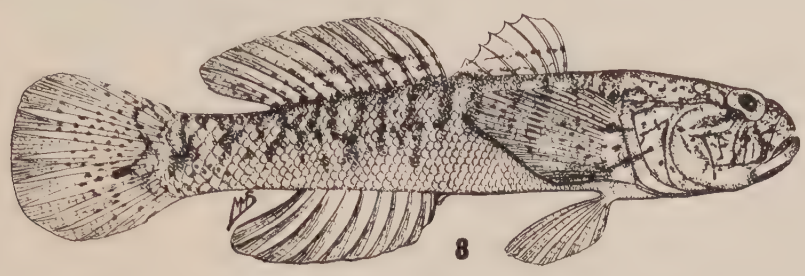

Fig. 8. **Coryphopterus natalensis** (Gunther). 96mm.

D VI+I 10. A I 9. P 19. Scales 50-54. Tr 14-16. Gillrakers 1+1+8. Depth about 4.5, head 3.3 in body. Eye 4.5-5 in head, 2-1.5 times interorbital with age. Head depressed. No naked area along dorsal base, no median predorsal scales, whole of nape and head naked. Cycloid scales on mid-belly, on pectoral base, and a group median prepelvic. 5 or 6 narrow vertical series of papillae below eye, end at horizontal series below. Mouth to below mid or front part of eye, tongue rounded, teeth in bands, outer series enlarged, lips strongly villose. Gillopenings little exceed pectoral base. The dorsals united, or almost. Pectoral to or near anal origin, pelvic shorter, with strong fraenum. Caudal rounded, to almost head length. Hind rays of dorsal and anal longer, reach to caudal base. Variably light olive to dark brown, spotted, often a black spot just above pectoral axil, faint broken or continuous narrow bars across body, 1st dorsal with dark blotches or streaks, 2nd dorsal and caudal with dark spots, other fins plain dusky. Not common. 12 specimens, 35-102mm., from Knysna to Bizana. Also 2 specimens from Natal, S.A. Museum Nos. 10928 and 16692, labelled **melanocephalus** Blkr, which are, however, clearly not that species, which has flaps on shoulder girdle and falls in **Chonophorus** Poey. There is little doubt that **natalensis** is a well defined and valid species. Mr. G. Palmer of the British Museum has kindly examined Gunther's types of **natalensis**, Nos. 1862.12.19.41.-42, 68 and 73mm. length, and the data agree well with my specimens.

CORYPHOPTERUS NUDICEPS (C & V), 1837. **Gobius nudiceps** C & V, 1837, XII, 65 (Cape). **Gobius gilchristi** Boulenger 1898, 8 (Brak River, Cape).

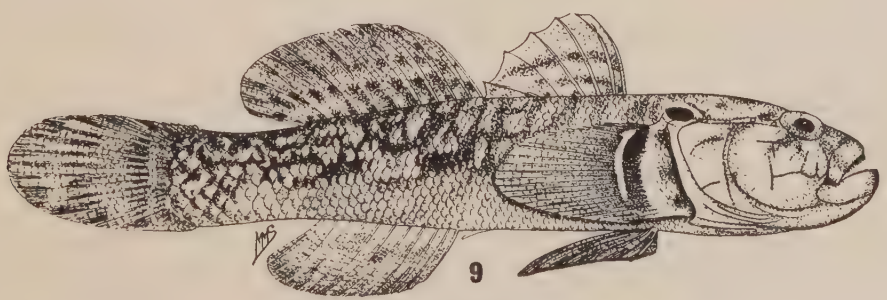

Fig. 9. **Coryphopterus nudiceps** C & V. 82mm.

D VI+I 11. A I 9-10. P 21-23. Scales 48-53. Tr 16-17. Predorsal 0-7. Gillrakers 4+1+8. Depth about 5, head 3-3.4 in body. Eye 3.6-4 in head, about equals snout, 1.3-1.1 times interorbital with age. Head depressed. Eyes subdorsal. No naked area along dorsal base. Median predorsal normally scaly, up to 7 scales, tend to vanish with age, front ¾ of predorsal and head always naked. Scales on belly and pectoral base cycloid, also a patch prepelvic, front of chest naked. 4-5 vertical

lines of papillae under eye and a horizontal series below. Mouth to below front of eye, lips thick, tongue rounded, teeth in bands, outer series considerably enlarged, no canines, lips villose. Gill-opening little exceeds pectoral base. Membrane from 1st dorsal barely reaches base of second. Pectoral and pelvics short of anal origin. Pelvic fraenum well developed. Caudal rounded, almost head length. Hind rays of dorsal and anal do not reach caudal base. Colour, prserved, dark brown or olive, speckled darker, forming irregular lines along body and aggregates across. Usually a more than half eye size dark blotch at shoulder. Spinous dorsal dusky, with two dark bars along the basal part, soft dorsal similar, anal mottled, caudal dusky with suggestion of irregular dark bars across base. Pectoral base light with characteristic dark bar across the base of rays, almost forming an ocellus above, margined by a light bar across about 14 rays behind.

Numerous specimens to 140mm. Knysna to the Cape, and S.Western Cape to Port Nolloth. Closely related to **multifasciatus** Smith, which it overlaps at Knysna, and from which it differs in the few predorsal scales, and in markings. It is always easily picked out by the characteristic bar on the pectoral, the latter noticed by the original authors. **Nudiceps** seems to be fairly common about the Cape. As indicated here, several related but clearly distinct species have long been confused with it. Dr. M. L. Bauchot of Paris kindly examined the types of **nudiceps** C & V, 89mm. and 120mm. length. He reports both to have D VI+I 11, A I 10, the larger only to have 4 predorsal scales, none in the other, and front of chest naked in both. In my specimens the median predorsal scales are decidous and variable. Mr. G. Palmer of the British Museum kindly examined Boulenger's three types of **gilchristi** and reports them to have D VI+I 11, A I 9-10, 49-51 scales, and 5-7 predorsal. Boulenger stated D VI+I 12.

CORYPHOPTERUS MULTIFASCIATUS Smith, 1959, 199, **f 13. Gobius nudiceps** (**non** C & V, 1837) In part, Barnard, 1927, 816: D VI+I 11 (rarely 12). A I 10 (rarely 11). P 18-19. 50-53 scales. Tr 15-18. PreD variable, about 12-16. Gillrakers 2+1+7-8. With age head broadens, interorbital almost equals eye. Ctenoid scales, cycloid on shoulder and predorsal, extend about $\frac{2}{3}$ to eye, none on head. To 150mm. Tide pools, Mossel Bay, eastwards, not uncommon, also in estuaries, sometimes in mud, previously confused with **nudiceps** C & V. Colour varies from light mottled yellow to almost black, cross-bars prominent, often spots on head. 1st dorsal barred. Markings vary with age, cross-bars become more distinct with growth. Distinguished from similarly barred **caffer** by scales on median predorsal and fewer series of lateral scales.

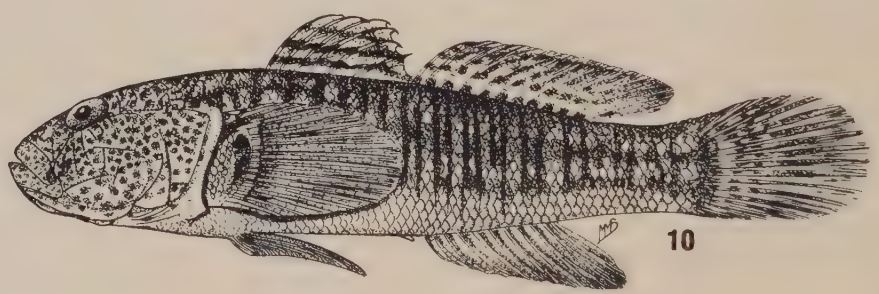

Fig. 10. **Coryphopterus multifasciatus** (Smith). 112mm.

CORYPHOPTERUS CAFFER (Gunther), 1874 (Port Elizabeth). **Gobius nudiceps** (**non** C & V) Gilchrist, 1916, 11 (part). Barnard 1927, 816 (part). Smith 1949b, 927 (part), **f 927.** D VI+I 12-13 (mostly 13). A I 11 (rarely 9-10). Scales 65-70. Tr 21-22. P 19-20. Gillrakers 2+1+7-8. Depth about 5, head about 3.5 in body. Eye 4-6 in head. 4-5 subvertical series of papillae below eye. Head broadens markedly with age, interorbital in young half eye, in large adults almost twice eye. Scales extend forward on side of nape about to above hind edge of opercle, but mid-predorsal and head naked. Body scales ctenoid, but cycloid on side of nape, also on pectoral base, on belly, which is wholly scaly, also hind half of prepelvic. Narrow naked area along 1st dorsal base. Gillopening slightly exceeds pectoral base. Maxilla to below front of eye, lips strongly papillose. Tongue rounded, teeth in bands in jaws, outer series enlarged. Soft dorsal reaches beyond caudal base with age. Pectoral and pelvic not to anus, caudal rounded, $\frac{3}{4}$ head. Pelvic cup-shaped, with strong fraenum. In life highly variable, light olive to almost black, almost invariably with 12-20 variably narrow dark bars across body. 1st dorsal dark basally, with 2-3 blackish stripes along the fin, edge yellow. Soft dorsal dark basally, with lines of dark spots along base, margin yellow. Anal dusky, pectoral and pelvic lighter. Caudal dark, rarely mottled. To 180mm., Cape to Natal. This fish, one of the most abundant in our tide pools, has generally been identified rather casually as **nudiceps** C & V. It is,

however, readily distinguished by the number of rays in the dorsal fin and by the high scale count, and easily recognised at all stadia by the black cross-bars. At my request Mr. G. Palmer has kindly examined Gunther's 96mm. type in the British Museum, with which my material agrees.

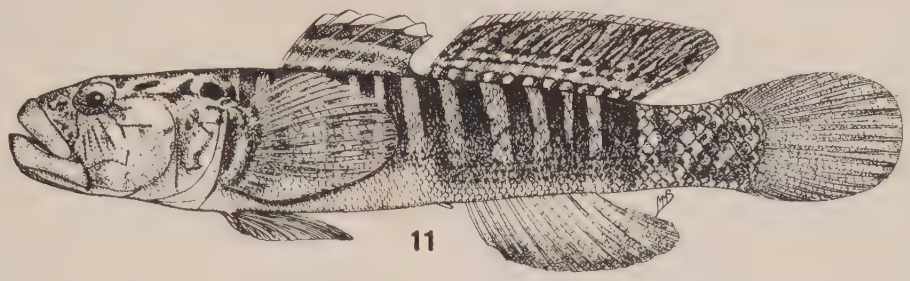

Fig. 11. **Coryphopterus caffer** (Gnthr). 120mm.

17. **Waitea** Jordan & Seale, 1905.

Type **Gobius mystacinus** C & V, 1837. 30-50 ctenoid scales, a few predorsal, head otherwise naked. Gillopening extends forward. Pelvic fraenum strong. 1st dorsal high. Caudal short. Indo-Pacific, 2 species, one in S.A.

WAITEA DUQUE (Smith), 1947. **Mahidolia duque** Smith 1947, 812: and 1949b, 330, **P1 27, f 907:** and 1959, 213, **P1 13, E.** D VI+I 10. A I 9. P 18. Scales 50. Tr 16. PreD 2-3. Gillrakers 4+1+13. Maxilla far behind eye. In life as Smith 1949, **P1 72, f 907.** 78mm. Only the type, Inhaca.

18. **Glossogobius** Gill, 1862.

Type **Gobius platycephalus** Richardson, 1845. 25-40 ctenoid scales, nape scaly, to eyes in adult, opercle scaly, head otherwise naked. Gillopening wide, front half of membranes united with isthmus. Tongue strongly bilobed. Pelvic fraenum strong. Caudal short. Indo-Pacific, one species in S.A., mainly freshwater.

GLOSSOGOBIUS GIURIS (Ham-Buch), 1822. **Gobius giuris** Gilchrist & Thompson 1917, 402. Fowler 1925, 262. Barnard 1927, 814. Smith 1949b, 334, **P1 73, f 919. Glossogobius g.** Smith 1959, 214, **P1 9, C.** D VI+I 8-9. A I 7-8. P 17-20. Scales 30-35. Tr 9-12. Predorsal scaling increases with age to about 25. Gillrakers 2+1+7-8. Eyes $\frac{1}{3}$-1 diameter apart with age. 3-5 lines of papillae along cheek. Tongue deeply bilobed. Scales on opercle. In life as Smith 1949b, **P1 73, f 919.** To 500mm. Freshwater and estuaries, from southern Cape to Natal and Indo-Pacific.

19. **Psammogobius** Smith, 1936.

Type **Psammogobius knysnaensis** Smith, 1936. 30-33 ctenoid scales, predorsal scaly, not to eyes; pectoral base, head, and most of chest, naked. Tongue feebly notched. Pelvic fraenum strong. Caudal short. Gillmembranes united forward, but almost entirely free from isthmus. Only the type, S.A. Related to **Glossogobius** Gill, distinguished by greater extent of gillopening and by absence of scales from head.

Fig. 12. **Psammogobius knysnaensis** Smith. 55mm.

PSAMMOGOBIUS KNYSNAENSIS Smith, 1936, 215: and 1949b, 906, **P1 71, f 906.** D VI+I 9. A I 10 (rarely 9). P 17-18. 30-33 scales. Tr 8-9 About 12 irregular preD, halfway to eyes, which are dorsal, adjacent, on depressed head. 3-4 lines of papillae along cheek. Gillrakers 1+1+6-8. Lower jaw projects, teeth curved, in 3-4 series in front of each jaw, 2 recurved upper canines

behind front teeth. A few cycloid scales close prepelvic, chest otherwise naked, also head, pectoral base, and mid-belly naked. Life colours as Smith 1949, **P1 71, f 906.** To 70mm. South Africa only, mostly in sandy estuaries, from Port Nolloth to the Cape and to Natal, lives mostly buried in sand, only the eyes show. It is remarkable that this species lives in the colder waters of the west coast as well, and grows to a larger size there. I have compared speciments from Port Nolloth and other localities with those from the south-east coast and find no difference save in size.

Sub-family Sicydiaphiinae.

Elongate body, naked, partly or fully scaly. 2 dorsal fins. Pelvics cup-shaped, free, or adnate to belly, fraenum with fleshy lobe each side. In lower jaw a single row of simple teeth, often labial teeth. Mainly tropical seas, not before found in South Africa. 5 genera in East Africa, one new genus and species from S.Africa described below.

20. Genus **Pyosicus** nov.

Genotype **Pyosicus niger n.sp.** Body covered with small cycloid scales, also on nape, head otherwise naked. Upper lip thick, lower jaw included. Teeth in single outer series on sides of jaws, no canines. Gillopenings lateral, restricted, isthmus broad. 1st dorsal of 6 spines, close to 2nd. Pectoral with silklike rays above. Pelvic cup-shaped, fleshy bilobed fraenum. Caudal short. The dentition and pelvic fin of this fish indicate Sicydiaphiine affinities, whereas the silklike pectoral rays and nuchal scaling show relationship with **Bathygobius** Bleeker. It is here placed in the Sicydiaphiinae.

Pyosicus niger n.sp.

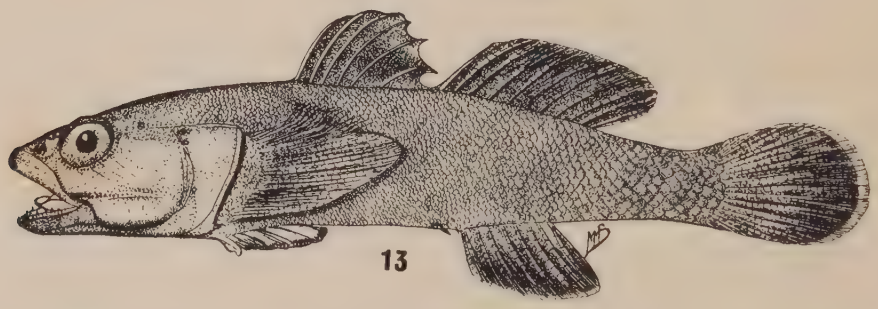

Fig. 13. **Pyosicus niger n.sp.** Type.

D VI+I 10. A I 8. P 7+16 = 23. Scales 65 series. Tr 25. Predorsal 20. Gillrakers 0+4. Depth 4.8, head 3 in body. Eye 4.2 in head, equals snout, 2.4 in postorbital. Pectoral 1.5, pelvic 2 in head. Head little depressed, body compressed. Eyes subdorsal, prominent, $\frac{1}{4}$ diameter apart. Front nostril a short tube, with pointed flap, hinder a raised pore close before eye. Small tubular pore between hind part of eyes, another behind each eye. One horizontal series of pores along mid-cheek. Gillopening barely exceeds pectoral base, distinct lobe of membrane at lower margin. Front $\frac{2}{3}$ of 1st gillslit closed by membrane, 4 short rakers on hind half of lower limb, none on upper. Mouth little oblique, upper lip thick, lower jaw shorter, maxilla to below mid-eye. Margin of each lip finely ciliate in front. In whole upper jaw an outer series of 24 recurved teeth, front 4 longest, behind these a short band of fine teeth across front of jaw. In lower jaw an outer series of 12 fine recurved teeth in front, within these a narrow band of fine teeth, and on each side a single series of 6 enlarged conical teeth. Palate edentate. Tongue feebly notched. 1st dorsal origin well behind head, 3rd spine longest, 2 in head, membrane from 6th reaches front of 2nd fin, soft fin uniform height, 3 in head. Anal wholly below 2nd dorsal, height 3 in head. Pectoral broad, upper 7 rays filamentous, silklike, fin barely reaches above anus. Pelvic cup-shaped, rays multifid, fraenum fleshy, bilobed. Caudal rounded, 1.5 in head. Body, also pectoral base and belly, covered with small cycloid scales, also over whole nape to above preopercle margin, none on median prepelvic, or on occiput, head quite naked. Scales largest, on peduncle, smaller in front, irregular on nape. In life almost uniform blackish brown, hind edge of caudal light. Only the type, 39mm. length in this department, taken in a rock pool, Bizana coast, Pondoland. In its characters a peculiar fish, an interesting addition to the South African fauna, unlike any other previously found.

Sub-family Gobiodontinae.

Compressed oval body, naked or scaly, blunt head, small mouth. Gillopening small, lateral. Small coral-dwelling fishes:

A. Body scaly ..... 21. **Paragobiodon**
B. Body naked ..... 22. **Gobiodon**

21. **Paragobiodon** Bleeker, 1873.

Type **Gobius echinocephalus** Ruppell, 1828. Body scaly, head and nape naked, covered with cilia. Mouth subvertical. Only the type.

PARAGOBIODON ECHINOCEPHALUS (Ruppell), 1828. Smith 1949b, 330, **Pl 72, f 908.** D VI+I 9-10. A I 8-9. P 20-22. Scales 24-26. Tr 8. No gillrakers. 2 canines at front of lower jaw. Brown, head lighter. To 40mm. Inhaca northwards to Pacific.

22. **Gobiodon** Bleeker, 1856.

Type **Gobius heterospilus** Bleeker, 1856. Deep, slimy, naked body and head. Mouth small, 1-4 canines each side of front of lower jaw. No gillrakers. 2 species in our area, both tropical, easily distinguished by colour

A. 1st dorsal spine shortest. Brown or dark ..... **rivulatus**
B. 1st dorsal spine at least as long as others. Yellow, blue lines ..... **citrinus**

GOBIODON RIVULATUS (Ruppell), 1828. Smith 1949b, 330, **f 905, citrinus non** Ruppell: and 1959, 219, **Pl 10, K, L & N.** D VI+I 10-11. A I 8-9. 1-2 larger lower canines each side. In life as Smith 1959, **Pl 10, K, L & N.** To 50mm. Inhaca northwards.

GOBIODON CITRINUS (Ruppell), 1828. Smith 1959, 219, **Pl 10, M.** D VI+I 10-11. A I 8-9. 1st D spine longest in young, equals 2-4th with age. 3-5 small lower canines each side. Yellow to orange, with red bordered blue lines, 2 through eye, 2 at P base, one along base of D and of A, remain in preservation. To 50mm. Inhaca, northwards, rare.

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INDEX

Names of genera and species accepted as valid in the South African region are in capitals.

SUB-FAMILIES

	Page
Gobiinae	299
Gobiodontinae	299, 313
Sicydiaphiinae	299, 312

GENERA

	Page
ABRANCHES	300, 305
ACENTROGOBIUS	300, 306
AMBLYGOBIUS	300, 308
BATHYGOBIUS	300, 307, 312
Chaeturichthys	302
Chonophorus	309
CORYPHOPTERUS	300, 308
CRYPTOCENTRUS	300, 301, 303
CTENOGOBIUS	300, 301
GLOSSOGOBIUS	301, 311
GOBIODON	300, 313
Mahidolia	311
MONISHIA	300, 304
OXYURICHTHYS	300, 302
PARACHAETURICHTHYS	300, 302
PARAGOBIODON	300, 313
PLATYGOBIUS	299, 301
PSAMMOGOBIUS	301, 311
PYOSICUS	300, 312
QUISQUILIUS	300, 305
STIGMATOGOBIUS	300, 305
SUFFLOGOBIUS	300, 308
VANDERHORSTIA	300, 303
WAITEA	300, 311
ZONOGOBIUS	300, 305

SPECIES

	Page
ACUTIPENNIS	301
AENEOFUSCUS	301
AGULHENSIS	308
ALBIMACULATUS	308
albopunctatus	307
BALTEATOPS	306
belosso	302
BIBARBATUS	308
CAFFER	308, 310
capistratus	307
CAUERENSIS	306, 307
chlorostigma	306
CITRINUS	313
CLOATUS	301, 302
criniger	301
cristatus	303
cryptocentrus	303
DELAGOAE	303
DEWAALI	305
DUQUE	311
DURBANENSIS	305, 306
ECHINOCEPHALUS	313
EUGENIUS	305
fasciatus	301
FLAMMEUS	305
FUSCUS	307
gilchristi	309
GIURIS	311
glaucofraenum	308
gymnauchen	309
heterospilus	313
INHACA	305
KEIENSIS	301
KEY	301
KNYSNAENSIS	311
LEMAYI	302, 303
macrorhynchus	301
maxillaris	305
melanocephalus	309
MICROLEPIS	302, 303
MULTIFASCIATUS	308, 310
mystacinus	311
NATALENSIS	308, 309
nebulopunctatus	307
NEBULOSUS	301
NIGER	312
nuchalis	303
NUDICEPS	308, 309
nudiceps	309, 310
obscurus	307
OCTOFASCIATUS	303
OCULATA	304
olivaceus	304
PAPUENSIS	302, 303
PINTO	305
platycephalus	311
pleurostigma	305
POLYNEMA	302
PRETORIUSI	303
REICHI	306
RIVULATUS	313
sadanundio	305
SALDANHA	304
semidoliatus	305
SIMULUS	306, 307
SORDIDA	304
SPENCE	306
SPHYNX	308
stagon	308
TENTACULARIS	302
TRIANGULARIS	306, 307
viridipunctatus	306
vonbondei	308
WILLIAM	304

LONGS' P.E. 72604